

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims

Claim 1. (Previously Presented) An activated carbon having a total amount of surface functional groups of 2.5 meq/g or less which is prepared from granular isotropic pitch, wherein, in a process of forming the granular pitch, a step in which spinnable pitch is spun into fibers is not performed.

Claim 2. (Original) The activated carbon according to Claim 1, wherein the granular isotropic pitch has an average particle diameter of 10 mm or less.

Claim 3. (Original) The activated carbon according to Claim 1, which has a specific surface area of 100 to 4000 m²/g.

4. (Canceled)

Claim 5. (Original) The activated carbon according to Claim 1, wherein the half band width of a peak indicating the D band of amorphous carbon is 1 to 4 times larger than that of a peak indicating the D band of graphite carbon in Raman spectra.

Claim 6. (Withdrawn) A process for producing activated carbon, which comprises: activating granular isotropic pitch with a chemical agent.

Claim 7. (Withdrawn) The process according to Claim 6, wherein at least one part of the chemical agent is a compound of an alkali metal element, a compound of an alkaline earth metal element, zinc chloride, sulfuric acid, or phosphoric acid.

Claim 8. (Withdrawn) The process according to Claim 6, wherein the chemical agent is potassium hydroxide or sodium hydroxide.

Claim 9. (Withdrawn) The process according to Claim 6, wherein the temperature of activation with the chemical agent ranges from 500 to 900°C.

Claim 10. (Withdrawn) The process according to Claim 6, wherein the amount of chemical agent ranges from 100 to 400 parts by weight in relative to 100 parts by weight of the isotropic pitch.

Claim 11. (Withdrawn) The process according to Claim 6, wherein the activating step comprises a pitch-moistening step of moistening at least the surface of the isotropic pitch at a temperature of 200°C or lower, a pitch-solidifying step of eliminating moisture at a temperature

of 400°C or less, and a pitch heat-treating step of heat-treating the solid at a temperature over 400°C with maintaining the solid state of the pitch.

Claim 12. (Withdrawn) A process for producing activated carbon, which comprises: infusibilizing granular isotropic pitch and subsequently activating the pitch with a chemical agent.

Claim 13. (Withdrawn) The process according to Claim 12, wherein at least one part of the chemical agent is a compound of an alkali metal element, a compound of an alkaline earth metal element, zinc chloride, sulfuric acid, or phosphoric acid.

Claim 14. (Withdrawn) The process according to Claim 12, wherein the chemical agent is potassium hydroxide or sodium hydroxide.

Claim 15. (Withdrawn) The process according to Claim 12, wherein the temperature of activation with the chemical agent ranges from 500°C to 900°C.

Claim 16. (Withdrawn) The process according to Claim 12, wherein the amount of chemical agent ranges from 100 to 400 parts by weight in relative to 100 parts by weight of the isotropic pitch.

Claim 17. (Withdrawn) The process according to Claim 12, wherein the activating step comprises a pitch-moistening step of moistening at least the surface of the isotropic pitch at a temperature of 200°C or lower, a pitch-solidifying step of eliminating moisture at a temperature of 400°C or less, and a pitch heat-treating step of heat-treating the solid at a temperature over 400°C with maintaining the solid state of the pitch.

Claim 18. (Withdrawn) A process for producing activated carbon, which comprises: heat treating granular isotropic pitch and subsequently activating the pitch with a chemical agent.

Claim 19. (Withdrawn) The process according to Claim 18, wherein at least one part of the chemical agent is a compound of an alkali metal element, a compound of an alkaline earth metal element, zinc chloride, sulfuric acid, or phosphoric acid.

Claim 20. (Withdrawn) The process according to Claim 18, wherein the chemical agent is potassium hydroxide or sodium hydroxide.

Claim 21. (Withdrawn) The process according to Claim 18, wherein the temperature of activation with the chemical agent ranges from 500°C to 900°C.

Claim 22. (Withdrawn) The process according to Claim 18, wherein the amount of chemical agent ranges from 100 to 400 parts by weight in relative to 100 parts by weight of the isotropic pitch.

Claim 23. (Withdrawn) The process according to Claim 18, wherein the activating step comprises a pitch-moistening step of moistening at least the surface of the isotropic pitch at a temperature of 200°C or lower, a pitch-solidifying step of eliminating moisture at a temperature of 400°C or less, and a pitch heat-treating step of heat-treating the solid at a temperature over 400°C with maintaining the solid state of the pitch.

Claim 24. (Withdrawn) A process for producing activated carbon, which comprises: infusibilizing granular isotropic pitch and then heat-treating and subsequently activating the pitch with a chemical agent.

Claim 25. (Withdrawn) The process according to Claim 24, wherein at least one part of the chemical agent is a compound of an alkali metal element, a compound of an alkaline earth metal element, zinc chloride, sulfuric acid, or phosphoric acid.

Claim 26. (Withdrawn) The process according to Claim 24, wherein the chemical agent is potassium hydroxide or sodium hydroxide.

Claim 27. (Withdrawn) The process according to Claim 24, wherein the temperature of activation with the chemical agent ranges from 500°C to 900°C.

Claim 28. (Withdrawn) The process according to Claim 24, wherein the amount of chemical agent ranges from 100 to 400 parts by weight in relative to 100 parts by weight of the isotropic pitch.

Claim 29. (Withdrawn) The process according to Claim 24, wherein the activating step comprises a pitch-moistening step of moistening at least the surface of the isotropic pitch at a temperature of 200°C or lower, a pitch-solidifying step of eliminating moisture at a temperature of 400°C or less, and a pitch heat-treating step of heat-treating the solid at a temperature over 400°C with maintaining the solid state of the pitch.

Claim 30. (Original) A polarizable electrode which is prepared by mixing the activated carbon of Claim 1 with at least a binder and an electroconductive filler.

Claim 31. (Original) The polarizable electrode according to Claim 30, which is a coat electrode prepared by applying a paste mixture containing the activated carbon to a surface.

Claim 32. (Original) The polarizable electrode according to Claim 30, which is a sheet electrode prepared by forming the mixture into a sheet.

Claim 33. (Original) The polarizable electrode according to Claim 30, which has an electrode density of 0.3 g/cm³ or more.

Claim 34. (Original) The polarizable electrode according to Claim 31, which has an electrode density of 0.3 g/cm³ or more.

Claim 35. (Original) The polarizable electrode according to Claim 32, which has an electrode density of 0.3 g/cm³ or more.

Claim 36. (Original) An electric double layer capacitor consisting essentially of a pair of polarizable electrodes, a current collector set onto each of the polarizable electrodes, and an electrolyte solution, wherein at least one of the polarizable electrodes is the polarizable electrode according to Claim 30.

Claim 37. (Original) An electric double layer capacitor consisting essentially of a pair of polarizable electrodes, a current collector set onto each of the polarizable electrodes, and an electrolyte solution, wherein at least one of the polarizable electrodes is the polarizable electrode according to Claim 31.

Claim 38. (Original) An electric double layer capacitor consisting essentially of a pair of polarizable electrodes, a current collector set onto each of the polarizable electrodes, and an

electrolyte solution, wherein at least one of the polarizable electrodes is the polarizable electrode according to Claim 32.

Claim 39. (Original) The electric double layer capacitor according to Claim 36, wherein the expansion ratio of the polarizable electrodes is 40 % or less after charging and discharging.

Claim 40. (Original) The electric double layer capacitor according to Claim 37, wherein the expansion ratio of the polarizable electrodes is 40 % or less after charging and discharging.

Claim 41. (Original) The electric double layer capacitor according to Claim 38, wherein the expansion ratio of the polarizable electrodes is 40 % or less after charging and discharging.

Claim 42. (Previously Presented) The activated carbon according to Claim 2, wherein the average particle diameter is 400 μm or less.

Claim 43. (Previously Presented) The activated carbon according to Claim 42, wherein said average particle diameter is 20 μm or less.

Appln. No. 09/911,483
Reply to the Office Action of February 27, 2004

Claim 44. (Previously Presented) The activated carbon according to Claim 3, wherein said specific surface area ranges from 100-2500 m²/g.